What is Claimed is:

1. A method for automatically processing subnet conflicts in a network defined by plural routers, each having interfaces to which segments are connected to support networked communication, comprising:

identifying all segments connected the interfaces of said routers by assigning a unique interface identifier (UID) value to each segment;

defining a zero-configuration routing information protocol (ZRIP) data structure that includes a UID structure for storing a UID value;

establishing a routing table associated with each of said routers, the routing tables being based on said ZRIP protocol and defining routing table entry (RTE) records for storing the subnet mappings of the associated router;

further defining each of said RTE records to include said UID structure as a data field associated with each of said subnet mappings;

employing each router to assign subnet mappings to each segment connected to its interfaces and to populate the RTE records of its routing table with said subnet mappings in association with the UID values of each connected segment;

exchanging RTE records between said routers and employing each router to compare RTE records received during said exchange with the RTE records in its routing table to detect if two or more subnet mappings are the same, whereupon a subnet conflict is declared.

2. The method of claim 1 further comprising providing notification when a subnet conflict is declared by exchanging RTE records between routers.

3. The method of claim 1 further comprising providing notification when a subnet conflict is declared by:

defining said ZRIP data structure to include a status structure designate whether an RTE record represents a conflict notification; and

transmitting an RTE record between one of said routers and another of said routers, with said status structure set to indicate the transmitted RTE record represents a conflict notification.

4. The method of claim 1 wherein a router detecting a subnet conflict automatically assigns a new subnet mapping to the conflicting subnet.

5. The method of claim 1 further comprising defining said ZRIP data structure to include a sequence structure for maintaining a running record of order in which subnet conflicts are processed.

6. The method of claim 1 further comprising:

defining said ZRIP data structure to include a sequence structure that maintains a record of the order in which subnet conflicts are processed; and

using said routers to automatically revise subnet mappings and advertise upon detection of a conflict, using said sequence structure to eliminate ambiguity between revised subnet mappings advertised at a first time and revised subnet mappings advertised at a later time.

7. The method of claim 1 wherein said segments are implemented using components that each have an assigned data link layer address and wherein UID value is assigned based on said standardized data link layer address.

8. The method of claim 7 wherein said data link layer address is a standardized media access control (MAC) address.

9. The method of claim 1 further comprising:

including a network address translation (NAT) table associated with each of said routers and updating said NAT table automatically in response to said exchanging of RTE records.

10. A system for communicating between a first point and a second point on a computer network such that no administration is required, the network including a plurality of routers, the system comprising:

a mapping table maintained by each router, the table including location and communication information corresponding to each point on the network, the information for each point comprising:

a. a local name field, whereby a first router maintaining the table refers to the point by the local name;

b. an interface field, whereby the router can communicate with the point by sending messages through the router interface corresponding to the interface field; and

c. a remote name field, whereby a remote router adjacent to the first router refers to the point by the remote name; and

an automated mechanism associated with each router, the mechanisms detecting changes to the location and communication information for the points and propagating those changes to all adjacent routers.

11. The system of Claim 10, wherein the mapping table further includes information identifying the router adjacent to the first router through which data must pass to reach a network point.

12. The system of Claim 11, wherein each table further comprises a forwarding router address field identifying the adjacent router from which the location and communication information for each point was obtained.

13. The system of Claim 12, wherein each automated mechanism propagates mapping changes through the use of information packets, the information packets including:

mapping information for each point relative to the sending router; and

if a point is not located on a segment connected to the sending router, a next router field including the router adjacent to the sending router that a message must pass through to reach the point.

14. A method for identifying segments on a network without administrative intervention, the method comprising the steps of:

using a first router to identify a first network segment;

advertising the identification of the first segment to a second router;

detecting an address collision at the second router, wherein a second segment has identical identification as the first segment;

using the second router to inform the first router of the address collision;

using the first router to change the address of the first segment;

wherein the first and second segments are uniquely identified.

15. The method of Claim 14, wherein the step of using the first router to identify the first network segment includes the step of creating a routing table entry corresponding to the first segment.

16. The method of Claim 15, wherein the step of advertising the identification of the first segment includes the step of sending an information packet including the routing table entry.

17. The method of Claim 16, wherein the step of informing the first router of the address collision includes sending an information packet including a routing table entry corresponding to the first segment.

18. The method of Claim 16, wherein the step of using the second router to inform the first router of the address collision includes modifying the state of a status field in the routing table entry corresponding to the first segment.

19. The method of Claim 14, further including the step of changing the identification of the second segment.

20. The method of Claim 19, wherein the steps of changing the identification of the first and second segments includes the step of modifying a sequence number such that the routers can distinguish between current and previous segment identifications.

21. A routing table entry data structure embodied in a computer readable memory for identifying a network host, the routing table entry comprising:

a unique identifier data field including information uniquely identifying a host;

an IP address data field including the network address of the host;

a status data field including address collision information such that a router can be informed that at least one other host is using an identical network address.

22. The routing table entry of Claim 21, further comprising a sequence number data field containing information for distinguishing the routing table entry from a previous routing table entry corresponding to the same host.

23. The routing table entry of Claim 22, wherein the sequence number data field is modified when the address data field is modified.

24. The routing table entry of Claim 22, wherein the sequence number data field is modified when the unique identification data field is modified.

25. A routing table entry data structure embodied in a carrier wave for identifying a network host, the routing table entry comprising:

a unique identifier data field including information uniquely identifying a host;

an IP address data field including the network address of the host;

a status data field including address collision information such that a router can be informed that at least one other host is using an identical network address.

26. The routing table entry of Claim 25, further comprising a sequence number data field containing information for distinguishing the routing table entry from a previous routing table entry corresponding to the same host.

27. The routing table entry of Claim 26, wherein the sequence number data field is modified when the address data field is modified.

28. The routing table entry of Claim 26, wherein the sequence number data field is modified when the unique identification data field is modified.

29. A method of exchanging information between routers on a computer network, the method comprising the steps of:

uniquely identifying each segment coupled to a first router in a first sub-network and storing this identification information in a first routing table;

uniquely identifying each segment coupled to a second router in a second sub-network and storing this identification information in a second routing table;

connecting the first sub-network to the second sub-network;

advertising the routes of the first router to the second router, wherein a route of the first router includes information on the path information must travel from the second router to get to a point on a segment coupled to the first router, and wherein these routes are communicated using routing table entries;

augmenting the second routing table with the routing table entries advertised by the first router;

detecting an address collision, wherein an address collision takes place if a first point on a first segment coupled to the first router has an identical address as a second point on a second segment coupled to the second router;

sending a notification from the second router to the first router including the address collision information; and

changing the identification of the first segment on the first router, wherein the new identification is unique throughout the entire network.

30. A method of sending a message from a first host on a first network segment to a second host on a second network segment, the first segment separated from the second segment by at least one router, the method comprising the steps of:

addressing the message from the first host to the second host using a first locally defined address of the second host, wherein the first locally defined address of the second host is the message destination address of the second host defined locally on the first segment;

using the router to translate the first locally defined address of the second host to a first externally defined address of the second host; and

propagating the message to the second host at the first externally defined address of the second host.

31. The method of Claim 30, further comprising the steps of:

propagating the message from the first router to a second router over a third segment, wherein the second segment is coupled to the second router and separated from the first segment by the first router, third segment, and second router, and wherein the first externally defined address of the second host is an externally defined address from the perspective of the first router and a locally defined address from the perspective of the second router;

using the second router to translate the first externally defined address into a second externally defined address; and

propagating the message to the second host at the second externally defined address.

32. The method of Claim 30, further comprising the steps of:

propagating a first externally defined source address to the first router with the message, wherein the first externally defined source address is the address of the first host from the reference point of the first router;

using the first router to translate the first externally defined source address to a first locally defined source address; and

propagating the first locally defined source address to the second host, wherein the first locally defined source address is an address that can be used by the second host as a locally defined destination address of the first host for sending messages to the first host.

33. The method of Claim 31, further comprising the steps of:

propagating a first externally defined source address to the first router with the message, wherein the first externally defined source address is the address of the first host from the reference point of the first router;

using the first router to translate the first externally defined source address to a first locally defined source address; and

propagating the first locally defined source address to the second router, wherein the first locally defined source address is an externally defined source address from the perspective of the second router;

using the second router to translate the first locally defined source address of the first host to a second locally defined source address; and

propagating the second locally defined source address to the second host, wherein the second locally defined source address is an address that can be used by the second host as a locally defined destination address of the first host for sending messages to the first host.

34. A method of identifying subnets on a network, such that communication between a point coupled to a first subnet and a point coupled to a second subnet is maintained following a change in the path between the subnets, wherein a subnet is a discrete subset of the network, the method comprising the steps of:

using a first router to assign locally unique subnet identifiers to subnets coupled to the first router, wherein the first subnet is coupled to the first router;

using a second router to assign locally unique subnet identifiers to subnets coupled to the second router, wherein the second subnet is coupled to the second router;

using the first router to assign identifiers corresponding to the subnets coupled to the second router that are locally unique from the perspective of the first router;

using the second router to assign identifiers corresponding to the subnets coupled to the first router that are locally unique from the perspective of the second router; and

maintaining a translation table at the first router for translating the addresses of the subnets coupled to the first router from the perspective of the second router to the corresponding addresses from the perspective of the first router.

35. The method of Claim 34, further comprising the steps of:

using a third router to assign locally unique subnet identifiers to subnets coupled to the third router, wherein the first router is coupled to a subnet coupled to the third router and the second router is coupled to a subnet coupled to the third router such that a path exists between the first router and the second router which includes the third router;

using the first router to assign identifiers corresponding to the subnets coupled to the second router.

36. A data record embodied on a computer readable medium for routing messages between a first point and a second point on a computer network, the first point coupled to a first network segment and the second point coupled to a second network segment, the data record comprising:

a unique interface identifier field for uniquely identifying the second network segment, wherein a network segment is a discrete portion of a network;

a locally defined subnet identifier field for identifying the second segment from the reference point of a first router;

an externally defined subnet identifier field for identifying the second segment from the reference point of a second router, wherein the second segment is coupled to the second router; and

a sending router address field for identifying the second router from the reference point of the first router;

wherein the record provides sufficient information to route a message originating at the first point to the second point.

37. A method of identifying a point on a network such that requires no user configuration, the method comprising the steps of:

randomly selecting a network address for the point;

broadcasting that address to a second point on the network;

comparing the address of the second point to the address of the first point;

broadcasting the results of the comparison to the first node; and

if the address of the first point and the address of the second point are identical, randomly selecting a new network address for the first point.

38. The method of Claim 37, further comprising the steps of:

broadcasting the address of the first point to a first router, wherein the router divides the network into segments such that the first point is on a first segment and the second point is on a second segment;

relaying the address of the first point from the router to the second point;

broadcasting the results of the comparison to the first router; and

relaying the results of the comparison from the first router to the first point.

39. The method of Claim 38, wherein the step of broadcasting the results of the comparison from the first router to the first point includes comparing the address of the first point to reference information in the router.

40. The method of Claim 38, further comprising the steps of:

broadcasting the address of the first point from the first router to a second router;

broadcasting the address of the first point from the second router to the second point;

broadcasting the results of the comparison from the second point to the second router; and

broadcasting the results of the comparison from second router to the first router.

41. The method of Claim 40, wherein the steps of broadcasting the results of the comparison from the second router to the first router and broadcasting the results of the comparison from the first router to the first point include comparing the address of the first point to reference information in the router.

42. The method of Claim 41, further comprising the steps of:

broadcasting the address of the first point to a plurality of other points; and

comparing the address of the first point to each of the plurality of points.

43. The method of Claim 42, further comprising the steps of:

broadcasting the address of the first point from the first router to a plurality of routers;

broadcasting the address of the first point from each of the plurality of routers to a plurality of points; and

comparing the address of the first point to the address of each of the plurality of points.

44. The method of Claim 37, wherein the first point and the second point are hosts.

45. The method of Claim 37, wherein the first point and the second point are routers.

46. The method of Claim 38, wherein the router uniquely identifies each segment.

47. An apparatus for communicating computer information, the apparatus comprising:

a computer network;

a first network node coupled to the computer network, the first node comprising an address selector for randomly selecting a network address, a network broadcaster for broadcasting that address to another network node, and a network receiver for receiving replies from another network node;

a second network node coupled to the computer network having a unique network address, the second node comprising a network listener for receiving the network address from the first node, an address comparator for comparing the address of the first node to the address of the second node, and a network broadcaster for sending the comparator results to the network listener of the first node.

48. The apparatus of Claim 47, wherein the network further comprises:

a first sub-network, wherein the first node is coupled to the first sub-network;

a second sub-network, wherein the second node is coupled to the second sub-network; and

a router, the router comprising an address selector for randomly selecting a network address, a network broadcaster, and a network listener.